PATENT DETAIL

A HEAVY-DUTY 3D ADJUSTABLE HINGE

A invention about hinge which can shift in multiple ways.

PATENT OVERVIEW

The main innovative aspects of this patent are:

- Three-Dimensional Adjustment Capability: The hinge features a three-dimensional adjustable mechanism that allows for movement in multiple planes, providing greater flexibility in fitting and alignment.
- Durable Construction: The use of a hexagonal adjustment screw and a hinge core with movabla improves the hinge's resistance to damage, especially suitable for heavy-duty applications.
- Wear Reduction: The inclusion of an axle sleeve that moves within the axis hole reduces wear on the hole itself, thereby extending the hinge's lifespan.

BACKGROUND

- Hinge is a mechanical device used to connect two objects and allow relative rotation between them, mainly in the field of doors and windows. With the development of the construction industry, heavy doors are more and more widely used in large shopping malls, hotels, etc., and the market demand for flexible heavy-duty hinges is also increasing

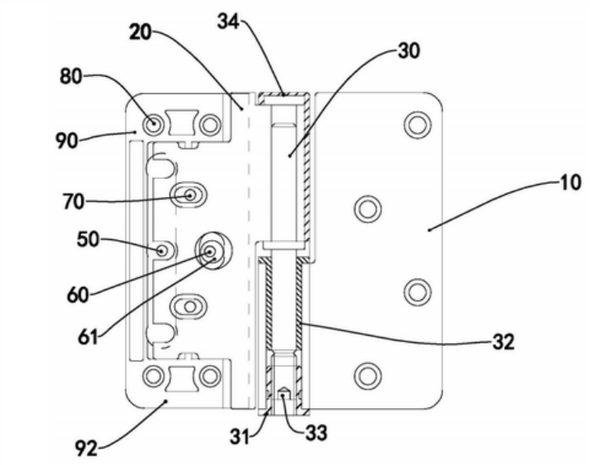
PROBLEM TO SOLVE

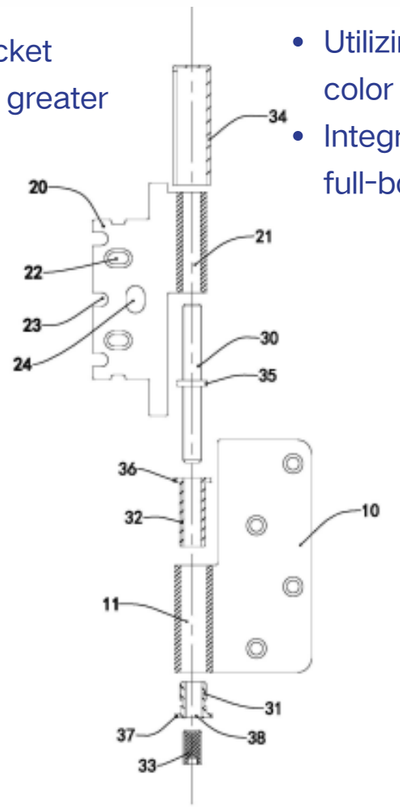
- Current hinges on the market have problems including fragility, lack of flexibility, and difficulty in adjusting size, so the patent uses software such as Unity to design a new type of hinge to solve these problems.

SOLUTION APPROACH

INTERIOR DESIGN

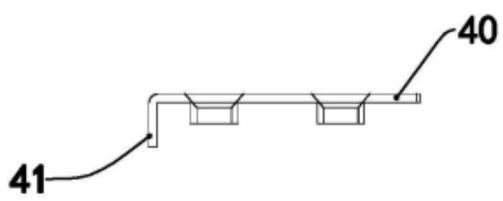
- Hexagon socket adjusting screws: Use hexagon socket adjusting screws with threaded bushings to provide greater thrust and less damage for heavy doors.





REMOVABLE FIT

- The hinge core fits removably into the shaft hole through the bushing, which reduces wear on the shaft hole and improves the service life of the hinge.

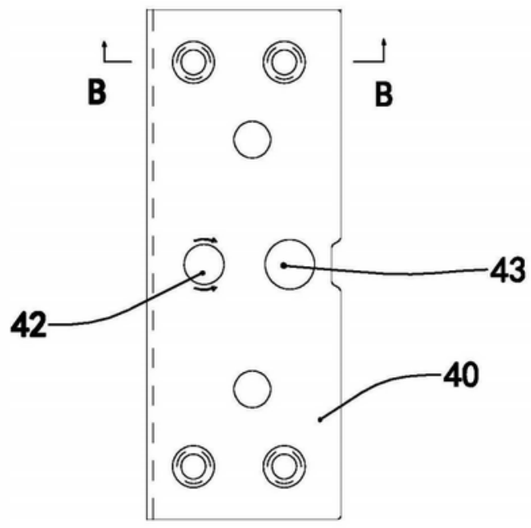


3D MODELING

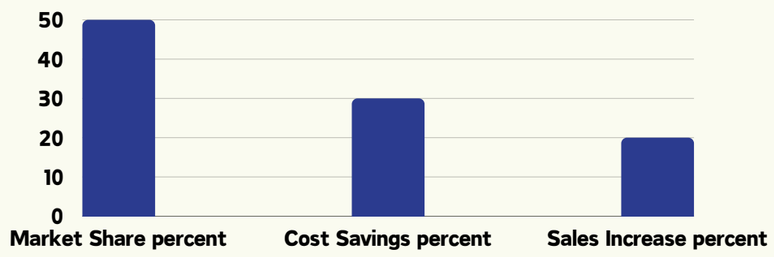
- Utilizing encoder-decoder networks to extract three-dimensional vertices and color information from 2D images for three-dimensional facial reconstruction.
- Integrating Deepfake technology and user-provided body data to establish full-body 3D models.

EXTERIOR DESIGN

- The cover cap covers the portion of the reamed core that is exposed from between the first and second shaft holes, reducing the impact on the appearance of the product and providing protection from dust accumulation and water ingress.



PROJECT OUTCOMES



CONCLUSION

This invention provides a heavy-duty three-dimensional adjustable hinge, the features of which include: The use of a hexagonal adjusting screw against the hinge core provides greater thrust and is not easily damaged for heavy doors. The hinge core is removably mated with the shaft hole via a bushing to reduce wear and tear on the shaft hole and improve the service life of the hinge. Overall, the invention enhances the adjustability, durability and aesthetics of the hinge by improving the structural design of the hinge, which is particularly suitable for heavy-duty doors.

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